TO: San Francisco Courthouse, Courtroom 12 - 19th Floor 450 Golden Gate Avenue, San Francisco, CA 94102

RE: Material Directly Relevant to Uber Case

For the Attention of District Judge William Alsup

Honorable Judge William Alsup:

I am the inventor of GPS Web Services - please see the attached WIPO/PCT file for details. The invention was submitted for academic evaluation in 2008 to Fuhua Lin of the University of Athabasca.

We reported to the US Patent Office the association between Fuhua Lin and Uber founders and the International Search Report (ISR) directly references Uber.

Very respectfully,

Glen Harding for Rover Dynamics, Inc. 54 Amy Way, Ladera Ranch, CA 92694 (949) 434 - 4300

CC: Kathleen_Shambaugh@cand.uscourts.gov Ravi_Subramanian@cand.uscourts.gov

Attachment: International Patent publication and Search Report

INTERNATIONAL SEARCH REPORT

International application No. PCT/US16/45074

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - G06Q 50/30, 30/06 (2016.01) CPC - G06Q 50/30, 30/0641, 30/0601, 30/30611 According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols) IPC(8): G06Q 50/30, 50/00, 30/06, 10/06; G01C 21/26; G06F 3/048 (2016.01) CPC: G06Q 50/30, 50/00, 30/06, 30/0641, 30/0601, 30/30805, 30/30811; G01C 21/26, 21/3401; G08F3/048, 3/0482			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, Other Countries (INPADOC), RU, AT, CH, TH, BR, PH); EBSCO; IEEE/IEEEXplore; Google/Google Scholar; Keywords: server, client, customer, browser, smartphone, vehicle, database, communicate, https, video, media, audio, request, transportation, taxi, Intelligent agent, software agent			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.
Υ	US 2004/0236502 A1 (NOZAKI, T. et al.) 25 November [0044], [0053], [0045], [0058], [0061].	r 2004; figures 4-5; paragraphs [0034],	1-17
Y	US 2005/0149529 A1 (GUTMANS, A.) 07 July 2005; figure 3; paragraphs [0011], [0012], [0035], [0074].		1-17
Y	US 2006/0059023 A1 (MASHINSKY, A.) 16 March 200	6; paragraphs (0024), (0029).	5-6, 9, 15-17
Y	US 2014/0026065 A1 (WANG, Y.) 23 January 2014; figure 5a; paragraphs [0041], [0056], [0061], [0077].		10
Y	US 2014/0129302 A1 (UBER TECHNOLOGIES, INC.) paragraphs [0070], [0076], [0090].	08 May 2014; figures 3C, 3H;	11
Y	HAILO. "HAILOAPP HOMEPAGE"; Publication [online]. 03 February 2015 [retrieved 15 September 2016]. Retrieved from the Internet: <url: 20150203035221="" https:="" web="" web.archive.org="" www.hailoapp.com=""></url:> .		13
Y /	CN 103354991 A (BROADCOM CORP) 16 October 2013; see machine translation		14
			,
Further documents are listed in the continuation of Box C. See patent family annex.			
 Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "By comment published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention 			
"E" earlier	earlier application or patent but published on or after the international "X" document of particular relevance; the filing date		claimed invention cannot be ered to involve an inventive
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document which may throw doubts on priority claim(s) or which is step when the document is taken along document of particular relevance; the considered to involve an inventive		claimed invention cannot be step when the document is	
"O" document referring to an oral disclosure, use, exhibition or other means combined with one or more other such the means being obvious to a person skilled in the		documents, such combination e art	
the priority date claimed			
Date of the actual completion of the international search 16 September 2016 (16.09.2016)		Date of mailing of the international search report 1 9 0 CT 2016	
Name and m	nailing address of the ISA/	Authorized officer	
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents Shane Thomas			
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MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

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- with international search report (Art. 21(3))
- with amended claims (Art. 19(1))



(57) Abstract: The present invention is an internet communications and coordination system for providing demographic transport and shipments services. Multi-agent technology comprises the web server, vehicle, and customer applications of the internet system. Moreover, relational database technology manages and automates the sytem. Importantly, the vehicles and customers in the system are sorted by their dynamic Global Positioning System (GPS) coordinates to automatically set up real-time transport and shipments propositions. And moreover, the GPS datagrams of the vehicles and customers interface to Geographic Information Systems (GIS) databases and web services for mapping, navigation, and ecommerce user interfaces. For example, a GIS map is drawn using the customer's GPS datagram for the map center point. Next, available vehicles are sorted by closest distance to the customer and offered as a proposition for transport services. Therefore, the system automatically creates ecommerce propositions based on dynamic closest distance between transport vehicles and mobile customers. In a preferred embodiment, the customer selects and contracts one of the closest vehicles which then navigates to the customer's current GPS position to provide the contracted transport services.

Multi-Agent System for Global Positioning System (GPS) Web Services

SPECIFICATION

TECHNICAL FIELD

[0001] The present invention comprises internet communications technology for enabling dynamic transport services for mobile customers. It is further related to web services technology for providing commercial ecommerce in the transport services and shipments industries. Moreover, in a preferred embodiment multi-agent technology comprises the internet web server and the internet applications for the vehicles and customers. Furthermore, the multi-agent web server utilizes relational database technology for automating the system and processing enterprise data. And importantly, the current invention is based on the Global Positioning System (GPS) for the three-dimensional coordinate system to model the system transport vehicles and demographic consumers. And moreover, the invention interfaces to GPS related web services including Geographic Information Systems (GIS) mapping and navigation technology. And furthermore, GPS data is used to access location information such as current traffic and therefore the invention is further related to the field of semantic web services applied to the transport services and shipments industries.

BACKGROUND ART

[0002] Prior art for the current invention includes the applicant's software and report titled "Global Positioning System (GPS) Multi-Agent Simulation", dated 25 June 2008. The applicant discloses a system for arranging dynamic transport between a mobile customer and a fleet of transport vehicles.

[0003] Further background art is the applicant's software and report titled "Multi-Agent System for Global Positioning System (GPS) Web Services", dated 30 July 2008. The applicant discloses an internet system for arranging transport services between mobile customers and a fleet of passenger vehicles registered on a GPS ecommerce web server.

SUMMARY OF INVENTION

Technical Problem

[0004] The problem addressed is how to provide as near real-time response as possible to consumer requests for transport and delivery services. Therefore the current invention addresses the physical problem of connecting transport vehicles to the dynamic locations of customers.

Solution to Problem

[0005] To achieve optimal responses to consumer requests for transport services a communications platform between the system vehicles and the customers is needed. The internet platform is chosen because it fits the needs of consumers and makes the transport service global in scope. Furthermore, web services is the selected communications protocol. It is device independent and interfaces with needed internet services such as mapping.

[0006] Moreover, multi-agent technology comprises the vehicle and customer applications for arranging transport services. And furthermore, multi-agent technology comprises the ecommerce web server for running the transport service enterprise including communications with and coordination of transport vehicles and mobile customers.

[0007] Furthermore, the current invention utilizes the Global Positioning System (GPS) coordinate system. Each vehicle and customer agent time-samples GPS data including current longitude, latitude, altitude, heading, speed, and time. Importantly, each vehicle and customer agent is mapped to its current time-frame GPS datagram and its location context. Therefore, from the dynamic GPS datagrams of the fleet of vehicles and the customer's current location, the fastest arriving vehicle is calculated and selected to provide the transport service.

[0008] And moreover, relational database technology is used to automate transport service contract formation. For example, when a customer demands transport service, the passenger vehicles are automatically sorted by closest distance to the customer and offered as a transport proposal. In sum, the current invention provides optimized vehicle responses to consumer requests for transport services primarily by dynamic GPS datagram sorting of the vehicles and customers.

Advantageous Effects of Invention

[0009] One advantage of the current invention is the competitive edge a transport enterprise gains by providing automated and optimal vehicle responses to consumer requests for transport or shipments services. The effect is the transport enterprise provider and the customers save time. Furthermore, the vehicles track to the dynamic GPS datagram of the customer and therefore the transport service increases customer convenience. In general, the invention is designed to automatically select the fastest arriving vehicle for a transport services request and therefore the effect is efficient usage of the vehicle and faster arrival times to the customers pickup location.

[0010] And furthermore, the invention helps solve the problem of managing a fleet of vehicles by automating dispatch. Customer demand for transport is dynamic and the GPS ecommerce server responds with the best utilization of its service vehicles automatically. And most importantly, the current invention works as a mechanism for automatically generating transport service propositions for each customer and the advantageous effect is revenue from contracted transport services.

Description of Embodiments

[0011] The web server, vehicles, and customers of the internet system communicate extensively based on GPS datagrams and multi-agent technology. First, an Internet web server is built for ecommerce web services and then integrated with multi-agent technology. Next, the multi-agent server is integrated with relational database technology to automate the system primarily by GPS datagram sorting.

[0012] Therefore, all embodiments of the current invention are based on an ecommerce agent running on an internet web server that manages the communications and coordination between registered vehicle and customer multi-agents. Furthermore, this executive web server agent maintains a searchable directory of all the vehicles and customers and interfaces with database technology for processing the transport enterprise data. Moreover, user interfaces for the server console and the vehicle and customer

internet browser applications are created primarily from server side generated relational tables. And in a preferred embodiment, raw GPS - or other location means - data is further processed to interface with standard GIS and web services mapping and navigation software.

[0013] The vehicle multi-agent application runs on a cell phone or other internet technology and represents, in one embodiment, a single driver. However way the driver is traveling, by motorbike, car, truck - whatever transport means by land, water, or air - it is the driver's internet device that is tracked. In an alternative embodiment, a vehicle agent is embedded in and corresponds to a specific vehicle and tracked independently.

[0014] The vehicle application connects to a GPS web server and registers itself as a vehicle including details like type and cost. A vehicle agent de-registers when out of service and also changes state from, for example, available to contracted. In a preferred embodiment, a vehicle agent time-samples GPS datagrams and processes and stores this data on the local device. Moreover, the vehicle agent constantly checks for messages from customers or the executive web server agent. If there is a customer message, for example, it contains the current GPS datagram for the pickup location. The message may also hold other information including drop-off coordinates.

[0015] Therefore, the vehicle agent must decide how to act on the message from apotential customer. For example, one automatic rule is that the vehicle, when available, bid on all transport requests when the customer pickup point is less than or equal to 1 mile away. The vehicle can therefore ignore or act on the customer message based on this or more complex rule.

[0016] If the vehicle decides to act on the customer's request for transport, this vehicle sends a proposal to the customer including costs. This vehicle agent then constantly checks for the customer's response to the proposal. In particular, if the customer's response is to accept the proposal, then the vehicle agent sends back a confirmation message to the customer. Then, in a preferred embodiment, the contracted vehicle and customer open direct communications and track each other to fulfillment of the transport contract.

[0017] In general, the customer multi-agent application runs on a cell phone or other personal internet technology and is used to secure dynamic transport and shipments services. In one embodiment, the application connects to a GPS web server and communicates its current location. The server sorts the available vehicles and dispatches the best-fit transport service automatically. Therefore, in this embodiment, the only user interaction required is any tracking and messaging between the consumer and the contracted vehicle. In further embodiments of the user interface, web services are used for GIS, navigation, and rendering the three-dimensional GPS data.

[0018] For enabling transport systems, a primary behavior of the customer application is time-sampling and communicating its current GPS datagram and agent identifier. In further embodiments for identification and communications, internet device audio and video is time-sampled together with the GPS datagram. The list of vehicles for a customer is periodically updated due to the fact that the availability of uncontracted vehicles changes dynamically.

[0019] In one customer interface, a GIS map is centered on the customer's current GPS datagram and the closest available transport vehicles then presented for selection. If the customer selects and contracts one of the vehicles, it pairs with the customer for messaging and tracking the contract to fulfillment including payment.

[0020] And furthermore, the current invention is a dynamic supply and demand based system. System performance is based on the fact that the number of vehicles is proportional to the number of customers. Too many vehicles is unprofitable for the transport provider and too few is inefficient for the consumer wanting rapid response. In one ecommerce embodiment, vehicle supply and demand is handled by competitive bids and quotes. Moreover, vehicle response time is improved with algorithms that balance vehicles to customers.

[0021] Furthermore, diverse ecommerce models are enabled by GPS web services. For example, with a public GPS web server anyone with a passenger vehicle and a cell phone can offer transport services. When a customer connects to this GPS site, the vehicles are sorted relative to the customer and offered for transport hire. In contrast, a private system for GPS web services has specialized vehicles including trained and vetted drivers.

Industrial Applicability

[0022] In a preferred embodiment, the current invention is designed for automatic and optimal selection of vehicles for responding to consumer requests for transport and shipment services.

[0023] For illustration, a water transport embodiment uses jet-skis for passenger and shipment vehicles and surfers and swimmers are the customers. The customers run their GPS application on internet wristwatches. The Jet-ski vehicles run their GPS application on cell phones or tablets. Anytime a swimmer or surfer triggers a request for transport using the wristwatch interface the closest jetski is calculated and selected to navigate to the customer and provide transport. The same principles apply for delivery of goods. And moreover, the principles apply to any type of passenger or delivery vehicle.

[0024] The goal of a GPS ecommerce server is forming contracts for transport between vehicles registered on the server and customers that connect to it. For example, if a customer specifically requires motorcycle transport, then the GPS server agent first searches only for vehicles that are registered as motorcycles. A relational table of available motorcycles is generated. Then, using the real-time GPS coordinates of these motorcycles, they are sorted by closest distance or fastest arrival time to the customer's dynamic location. The motorcycle that is the best-fit to the customer's GPS pickup location - including route, cost, and time factors - wins and is automatically selected. Alternatively, the top closest candidates are given as a list for the customer to select from.

[0025] In general, a GPS server agent calculates and communicates a list of the closest vehicles that match a customer's request for transport service. Furthermore, this list allows direct communications between the customer and these transport service vehicles. For illustration, the customer's current GPS datagram is placed in a message with any other information like drop-off location and sent to all the vehicles in this list. The customer agent repeatedly checks for a vehicle reply. If a message arrives and its performative is Propose, then this vehicle is offering transport and bids on the service based on the customer's transport service requests. The customer can refuse, negotiate, or accept the proposal. If the customer accepts the bid for transport, an Accept Proposal performative is communicated to this winning vehicle. The customer agent checks for the final part of the ecommerce semaphore for securing a transport-shipment vehicle: confirmation from the vehicle agent that it is now contracted and committed to navigating to the customer's target GPS position.

AMENDED CLAIMS received by the International Bureau on 12 December 2016 (12.12.2016)

CLAIMS

What is claimed is:

1. A communications and coordination system comprising an internet web server application that handles incoming client connections in an infinite loop;

wherein said system further comprises said web server application extended as a persistent process thread object having messaging means across the internet by said process thread object identifier;

wherein said client connections are adapted for a vehicle internet application for providing transport services;

wherein said client connections are adapted for a customer internet application for contracting transport services;

wherein said web server application maintains a searchable directory of said vehicles and their service descriptions as said process thread objects;

wherein said internet web server application services said customer internet application requests for transport by searching said directory of process thread objects and matching said vehicle service descriptions to said customer transport service requests;

wherein said server application builds a set of said vehicle process thread object identifiers that correspond to available service vehicles that match said customer transport service requests;

wherein said server application returns said set of vehicle process thread object identifiers to said customer internet application as an ecommerce proposition for contracting transport and shipping services.

2. The system of claim 1 wherein said web server application further maintains said customers as said process thread objects in said searchable directory;

wherein said internet web server application services vehicle requests for available customers by searching said directory of process thread objects and matching available customers to said vehicle:

wherein said server application builds a set of said customer process thread object identifiers;

wherein said server application returns said set of customer process thread object identifiers to said vehicle internet application.

- 3. The system of claim 1 wherein said web server is the intermediary for all messaging between said system vehicles and customers.
- 4. The system of claim 1 wherein Hyper Text Transfer Protocol Secure (HTTPS) is used.

5. The server application of claim 1 further comprising a user interface extended as said process thread objects and adapted for the display of said system server, vehicle, and customer messages wherein said messages are identified by unique message identifiers to enable independent message processing;

wherein said user interface is further adapted for displaying real-time location message datagrams including data selected from, but not limited to, longitude, latitude, speed, heading, date, and time;

wherein said user interface is further adapted for Geographic Information Systems (GIS) data relating to said system server, vehicle, and customer location messages.

wherein said user interface is further adapted for displaying said system server, vehicle, and customer audio and video image sensor messages;

wherein said user interface is further adapted for the display of said system vehicle service descriptions and said customer transport services requests.

- 6. The system according to claim 1 wherein said system server, vehicle, and customer messages including location, audio, and video image sensor data are communicated in a well-formed device independent and internet transport protocol independent language.
- 7. The device independent and internet transport protocol independent language of claim 6 further comprising a web services protocol stack.
- 8. The server application of claim 1 wherein server searches said directory of process thread objects and matches said vehicle service descriptions to said customer transport service requests by further comparing mutual message data including, but not limited to, said vehicle's and customer's current location;
- 9. The server application of claim 1 further comprising a network database object further extended as said process thread object and adapted for processing said system, vehicle, and customer messages wherein said messages are identified by unique message identifiers to enable independent message processing.
- 10. The system of claim 1 wherein said vehicle internet application is extended as a process thread object having messaging means across the internet by said process thread object identifier;

wherein said vehicle internet application is adapted for providing transport vehicle services including taxi and shipping services;

wherein said vehicle application runs in an infinite loop and at an adjustable rate samples its location sensor data selected from, but not limited to, longitude, latitude, altitude, speed, heading, date, and time;

wherein said vehicle application maintains a service description relating to its specific transport vehicle capabilities including cost terms for contracting said vehicle's services;

wherein said vehicle application uses adjustable time cycle rates to process messages from said system server, vehicles, and customers, and message identifiers are used to process independent message channels;

wherein said customer messages contain transport service requests together with said customer's process thread object identifier and location data;

wherein said vehicle application calculates whether to refuse or make a transport service proposal to said customer based on said customer message;

wherein the case said vehicle application makes a transport service proposal it sends a message to said customer containing data selected from, but not limited to, said vehicle's process thread object identifier, said vehicle's service description, said vehicle's sensor data including location, audio, and image data, and calculated quantities such as arrival time and fare quote;

wherein the case said customer accepts said vehicle's transportation service proposal the contract is confirmed and by utilizing each other's process thread object identifiers said vehicle and customer exchange messages with unique message identifiers to enable independent message processing and by further utilizing said independent location message data said vehicle and customer synchronize mutual navigation and tracking to said customer's current position.

11. The vehicle internet application of claim 10 wherein said vehicle application communicates to said system server application a request for the process thread object identifiers of available customers matching said vehicle's service description;

wherein said server application selects the available matching customers and returns these customers represented as a set of process thread object identifiers;

wherein by utilizing each other's process thread object identifiers said vehicle and customers exchange communication and coordination messages at adjustable time-frame rates for the purpose of contracting route transport services with said customers;

12. The vehicle internet application of claim 10 wherein said vehicle application communicates to said system server application a request for the process thread object identifiers of other system vehicles;

wherein by utilizing each other's process thread object identifiers said vehicles exchange communication and coordination messages at adjustable time-frame rates for the purpose of synchronizing transport service provider vehicle activities including restocking wholesale inventory.

13. The vehicle application of claim 10 further comprising a network database object further extended as said process thread object and adapted for processing said system, vehicle, and customer messages wherein said messages are identified by unique message identifiers to enable independent message processing.

14. The vehicle application of claim 10 further comprising a user interface extended as said process thread objects and adapted for the display of said system server, vehicle, and customer messages wherein said messages are identified by unique message identifiers to enable independent message processing;

wherein said user interface is further adapted for displaying real-time location message datagrams including data selected from, but not limited to, longitude, latitude, speed, heading, date, and time;

wherein said user interface is further adapted for Geographic Information Systems (GIS) data relating to said system server, vehicle, and customer location messages.

wherein said user interface is further adapted for displaying said system server, vehicle, and customer audio and video image messages;

wherein said user interface is further adapted for the display of said system vehicle service descriptions and said customer transport services requests.

15. The system of claim 1 wherein said customer internet application is extended as a process thread object having messaging means across the internet by said process thread object identifier;

wherein said customer internet application is adapted for contracting transport vehicle services including taxi and shipping services;

wherein said customer application runs in an infinite loop and at an adjustable rate samples its location sensor data selected from, but not limited to, longitude, latitude, altitude, speed, heading, date, and time;

wherein said customer application maintains a transport services request description relating to said customer's specific transport services requirements, and further incorporates said customer's current location and process thread object identifier;

wherein said customer application uses adjustable time cycle rates to process messages from said system server, vehicles, and customers, and message identifers are used to process independent message channels;

wherein said customer application communicates to said system server application said transport services request;

wherein said server application selects the available vehicles that match the customer's transport services request and returns these vehicles represented as a set of process thread object identifiers;

wherein said customer application iterates over said set of vehicle process thread object identifiers and sends selected transport vehicles said customer transport services request;

wherein the case a vehicle accepts said customer's transport services request a contract is confirmed and by utilizing each other's process thread object identifiers said vehicle and customer exchange communication and coordination messages at adjustable time-frame rates;

wherein said messages have unique message identifiers enabling independent processing of said vehicle and customer ecommerce, location, audio, and image data messages;

wherein by further utilizing each other's said independent location message data said vehicle and customer synchronize mutual navigation and tracking to said customers's current position.

16. The customer internet application of claim 15 wherein said customer contracts more than one vehicle for fulfilling said customer's transport services request including goods delivery from multiple vehicle providers;

wherein by utilizing each other's process thread object identifiers said vehicles and customer exchange communication and coordination messages at adjustable time-frame rates;

wherein said messages have unique message identifiers enabling independent processing of said vehicle and customer ecommerce, location, audio, and image data messages;

wherein by further utilizing each other's said independent location message data said vehicles and customer synchronize mutual navigation and tracking to said customers's current position.

17. The customer internet application of claim 15 wherein said customer application communicates to said system server application a request for the process thread object identifiers of other customers matching said customer's transport services request;

wherein said server application selects the available matching customers and returns these customers represented as a set of process thread object identifiers;

wherein by utilizing each other's process thread object identifiers said customers exchange communication and coordination messages at adjustable time-frame rates;

wherein said messages have unique message identifiers enabling independent processing of said customer ecommerce, location, audio, and image data messages;

wherein by further utilizing each other's said independent location message data said customers synchronize mutual transport service objectives including car-pooling.

18. The customer application of claim 15 wherein said customer selects multiple vehicles and multiple customers for fulfilling said system transport service objectives;

wherein by utilizing each other's process thread object identifiers said vehicles and customers exchange communication and coordination messages at adjustable time-frame rates;

wherein said messages have unique message identifiers enabling independent processing of said vehicles and customers ecommerce, location, audio, and image data messages;

wherein by further utilizing each other's said independent location message data said vehicles and customers synchronize mutual navigation and tracking.

19. The customer application of claim 15 further comprising a user interface extended as said process thread objects and adapted for the display of said system server, vehicle, and customer messages wherein said messages are identified by unique message identifiers to enable independent message processing;

wherein said user interface is further adapted for displaying real-time location message datagrams including data selected from, but not limited to, longitude, latitude, speed, heading, date, and time;

wherein said user interface is further adapted for Geographic Information Systems (GIS) data relating to said system server, vehicle, and customer location messages;

wherein said user interface is further adapted for displaying said system server, vehicle, and customer audio and video image messages;

wherein said user interface is further adapted for the display of said system vehicle service descriptions and said customer transport services requests.

- 20. The customer application of claim 15 further comprising a network database object further extended as said process thread object and adapted for processing said system, vehicle, and customer messages wherein said messages are identified by unique message identifiers to enable independent message processing.
- 21. The customer internet application of claim 15 further comprising an adjustable time-rate wherein said set of available vehicles for contracting by said customer is updated periodically due to the fact that system availability of said vehicles dynamically changes.